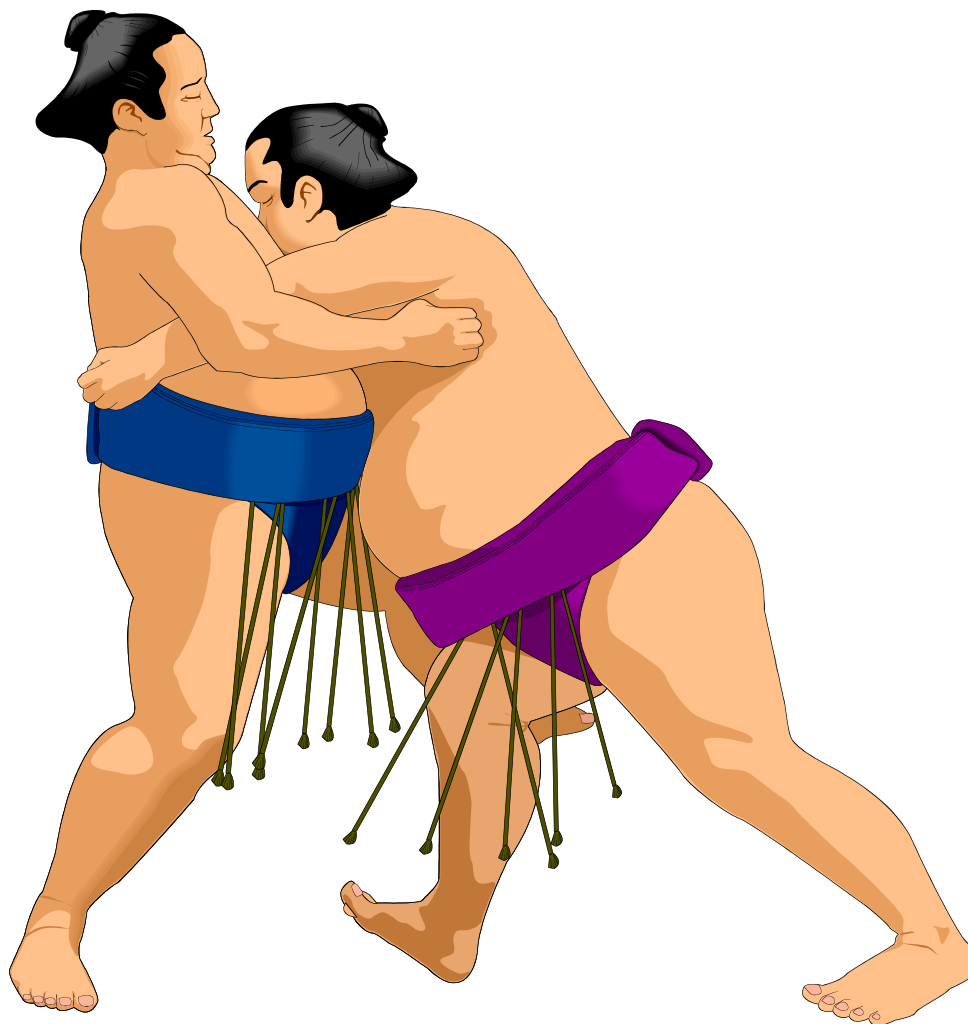




# Adding a Power Element to Training

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# First a few Definitions

- Strength — is refers to how much force we can produce
- Power – the rate at which that force is applied
- Agility –coordinated movement that places the body in an intended position in a fluid and rapid manner to utilize that force





# How do strength and power Interact?

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- All Sports require a varying mixture of both
  - Events in strong man competitions
  - A serve in tennis or a drive in golf
  - A high jump or long jump in track
  - A pro football lineman



Each of these sports rely on a optimal combination of strength and power and is further complicated by body size





# Why worry about training for power and agility?

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- **As we age (past our peak in our early teens to our early thirties depending on our activity) physiological performance starts to decline**

movements become slower, reaction times worsen, coordination becomes tougher especially while performing complex movements, muscle mass decreases (especially in fast twitch fibers), fat mass increases, bone density decreases, risks of falls and their severity increases



- **However, you can teach an old dog new trick**

strength gains have been shown to be as high as 100% in those 60 to 70 years of age after starting a strength training program. Reaction times for fit active older men are equal to or lower than inactive men in their twenties!



# How are strength/power and agility measured?

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- **Strength** – 1RM lifts on a weight machine (how's that max bench or leg press doing?)
- **Power** – medicine ball put, maximal stair climb test, Wingate test, vertical jump (can you still slam dunk?)
- **Agility** – edgren side step tests, tire drills, T drills (remember suicide drills in hoops?)
- ***Are your power and agility tests showing more decline than the strength tests?*** – then you've neglected the velocity and coordination components of your workouts



# Battle plan for improving power and



- ***Shift away*** from a steady bland diet of the same aerobic exercise ( I.e. stationary cycling) and strength training (weight machines)
- ***Add in/substitute*** part of your workout with complex coordinated movements requiring power and agility to meet your performance/health goals.
- ***Tailor the new movements (their speed, power and agility components) to your sport of interest or for the average person to just slow down the effects of aging and keep you ready for action.***

# Watch for impact and stresses

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- Often exercises which use jumping/bounding type movements may have a considerable impact stress. Choose a nice shock absorbing surface (grass or wrestling mats). However, too thick or cushiony a surface although lessening impact stress may not be as effective.
- Limit to two workouts per week with a specified number of foot contacts (around 60).





## Prestretch and Countermovements

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- When a muscle is prestretched the energy stored in the muscle's natural elastic properties will make subsequent contractions stronger.
  - Try the balloon test with various amounts of air
  - Why would jumping on a trampoline not be as effective for stretching leg muscles?
- This is the foundation for the inclusion of plyometrics in power training and the idea behind entering a stretched position prior to many strength exercises
- Lastly our heart muscle also responds in a similar fashion with a more vigorous contraction when it fills with blood.



# Body Power



- Plyometrics – jump drills
- Medicine ball Work (either standing, sitting or kneeling)
- Sled towing/pushing, resisted sprints
- Ball drops, Lean fall run
- Clap push-ups, Drop and catch push-ups
- Olympic lifts – power clean, hanging clean, clean and jerk, push press and jerk and snatch as well as hanging clean
  - Incorporate whole body power in both pulling and pushing muscles





# Medicine Ball Ideas — throwing and catching adds unique fitness characteristics



Military and Presidential History Hoover Ball!



Throws - underhand, overhead, downward and backwards



Different weights and types  
– easy make your own



Puts



Rotation



Add to other training devices



Be Open to new  
ideas for your  
Unit Program



# You Just Never Know When You Can Turn Something Strange into a Piece of Exercise Equipment



A few links off the anchor chain of an ocean going freighter



You do some leg hooks and agility drills on a soccer goal or some road cones



You fashion a barbell out of old railroads wheels

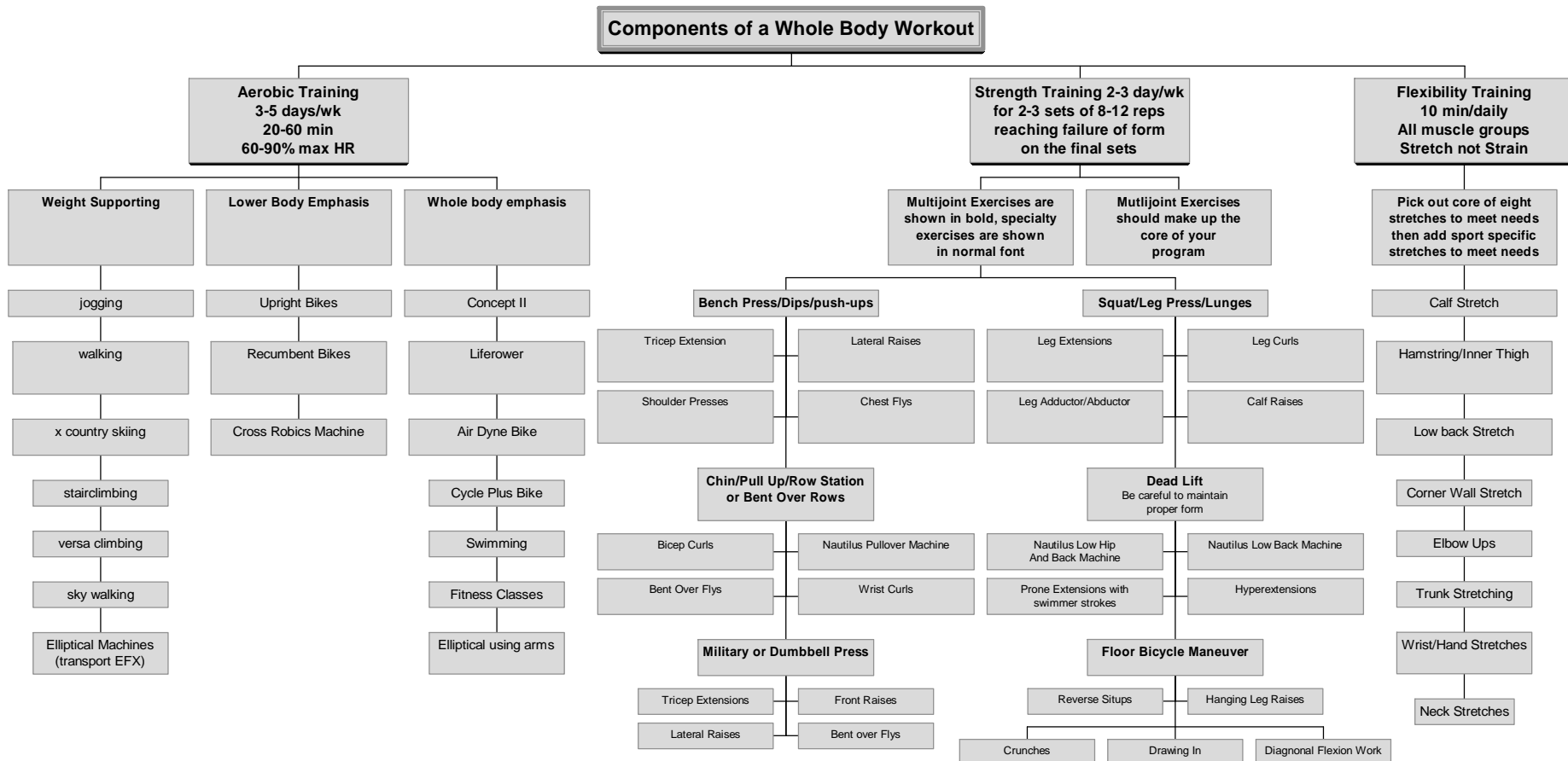


You and some new friends can work out with an old spring you found on the beach!





# Physical Training Spreadsheet



***Note:** Any exercise can cause injury if done improperly - or if you have a medical condition that would be aggravated by various movements. Although almost everyone is encouraged to incorporate more walking and other mild exercise in their day (such as gardening or golf etc.), you should check with your physician before starting a more vigorous exercise program.*